

IN NAVY YARDS  
WHAT IS OVERHEAD  
TO PRODUCTIVE LABOR

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## NAVY YARD ONE HUNDRED FIFTY PERCENT OVERHEAD

THE tendency of the time is to eliminate unnecessary expenditure of money, and to establish our government institutions on strictly practical methods of expending the funds so that the expenditures will be justified by the output of productive labor that will compare favorably with general business practice.

The United States Navy is the reason we have Navy Yards. Navy Yards are not the first consideration, but as long as the country is depending on the Navy for its protection, its defense, and its very existence, our Navy becomes a necessity so vital that no one will question its utility, and having established its absolute indispensability we next have to equip Navy Yards for the maintenance of our Naval Defense.

Navy Yards are a necessity, because the Navy is a factor of security to the nation, for it is ever alert and ready to require due respect from any power that would oppose our rights to a government of the people and for the people.

A government of the people is best served in every case when the servant is a part of the government which he serves. Such a government can do no better than have confidence in the citi-

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zens that have, by their services to the nation, proven their loyalty to the principles that are the basic foundations of their government.

In Navy Yards the employees are all citizens; the majority are veterans of different wars. They are loyal and interested in efficient Navy Yards. "There are exceptions, those who are not willing to consider their preference as a secondary consideration to the efficiency of the Yard," and in a sincere desire to promote efficiency of the Navy Yards wish to consider the evil of overhead as a direct cause of misunderstanding, rather than a justifiable expense as overhead to productive labor in Navy Yards.

**In Navy Yards What is Overhead to Productive Labor when we say 150% or  
160% Overhead**

Overhead to productive labor is an expense of the station under the Naval Expenditure as rendered in accounts for maintenance of equipment, additions, betterments of ships, stations, and establishments.

Navy Yards have two industrial divisions; hull and machinery. They are the only divisions of the Navy Yards whose output in repairs or manufacture are considered as productive labor. These divisions are for the maintenance of an

efficient Navy and are most essential for its upkeep. Being only two of its many divisions, it is not logical to charge all expenditures of a Naval District to these two, when as a matter of fact, one division is just as essential to the Navy as the other; so in just consideration of the different departments or accounts of expenditures in Navy Yards, why not charge each division with its direct expenses to the Navy or for the Navy, and not as indirect expenses to the only two industrial divisions in the Navy Yards?

All ships are supplied with provisions and fuel while in the Navy Yards. All ships have access to Naval supplies. The cost of maintaining a supply base should not be charged as overhead to productive labor. In fact, the different divisions are for the direct needs of the Navy and not for the maintenance of the only two industrial divisions.

The writer is not criticizing any expenditures, nor has he any intention of placing responsibility for the practice of charging all expenditures of a Naval District as overhead to productive labor, but, does affirm his conviction that considering one division as important as the other, each should be charged according to their direct expenses, plus a reasonable percentage of the cost of a division which is contributing to its produc-

tion, but only in such proportion as would be equitable, considering that one division is as important as another to the efficiency of a Navy Yard. Overhead to Navy Yards is the total expenses of that Yard under its accounts as follows: The industrial divisions of the yard—Hull and Machinery have shops fully equipped for manufacturing and repairing all machinery of the ships that are assigned to the yard. These shops have direct shop expenses. They have supervisors from civilian life who have passed satisfactory examinations as required by Civil Service rules and regulations. Their duty is to conform to the department orders and to supervise civilian employees who are in their charge. Their salary is a direct expense to their respective shops; the heat, light, power, and repairs to equipment is also direct expenses to the shops. The non-productive labor such as clerks, stock-room attendants, janitors, and consummable supplies are direct shop expenses. By adding to the above 5% above cost of material furnished to shops, by the supply division we would have a very reasonable charge as direct shop expenses. This would be legitimate and would amount to only 22% of our overhead burden. All of the above expenditures should be charged to productive labor as direct shop expenses, but these ex-

penses *only* should be charged as overhead to productive labor.

### **The Overhead Burden to Productive Labor Is?**

Overhead burden to productive labor is the practice of an accounting system that considers the cost of all military expenditures, needs and requirements of the shops, yards and stations of a Naval District as overhead to industrial divisions of the Navy Yards. The only two divisions of the Navy Yard that have civilian employees who must accomplish productive results are considered as the proper divisions to assume the burden of the Yard expenditures as overhead to their production. It is most essential to productive labor in a Navy Yard that it maintains a high rate of production. It is imperative that no phantom expenses be assumed expenses, and that no military expenditures be prorated as general expenses and considered as indirect expenses.

#### **Repair of Motor Armature for a Ship — Auxiliary Equipment**

Shop E (electric shop) has an armature to repair; estimate for rewinding is \$65.00; new commutator is \$42.00; total \$107.00 A job order is given shop E for rewinding at \$65.00. Outside contractor is given contract for commu-



tator because shop E has estimated \$42.00 for the total cost of material and labor. The planning section has considered the overhead expenses of the shop, and in consequence the contractor has been awarded the contract at \$41.00.

*Results:* The cost of rewinding the armature in the Navy Yard is from appropriation D as maintenance and operation of ships. The payment of the commutator is from the same appropriation. The direct results are that instead of the shop having \$41.00 additional productive labor to its credit, it has an indirect expense for material, because this material is considered indirect to productive labor of the yard (phantom overhead). It is not a need of the electric shop, but a necessity of the vessel that requested the repair of the armature. It is an auxiliary machine of a ship. The objection of the civilian employees to the general expenses of a station as overhead to productive labor is not an objection of cost or expenditure, but because it is wrong to consider the efficiency of a Navy Yard employee as a percentage of the total expenditure of a Naval District. It is unjust to expect the industrial division of a Navy Yard to be able to compete on producing work for the Navy or for the Shipping Board under the burden of indirect overhead.



*Indirect Expenses.* They are: Commutator of armature furnished by outside contractor cost \$41.00. The following routine of administering force had to follow for winding of armature and commutator.

CONTRACT A AND B.

A. *Armature* — Ship request for repairs. Method of procedure: Planning section estimates; job order is issued for repairs; shop winds armature; total cost is \$65.00 for productive labor; money is available from appropriation D. Direct shop expense which will never exceed 30% would constitute the total cost of winding the armature.

B. *Commutator* — method of procedure. Estimating report to planning section; request for commutator to supply division; bids are requested for commutator. Contract is awarded by supply division; receiving division receives commutator; inspection division takes commutator to shop for test; supply division accepts commutator; paymaster pays \$41.00; accounting division compute cost and charges its cost to appropriation D at \$41.00; as material, it is charged as indirect expense and overhead to productive labor prorated among the shops of the only two industrial divisions of the Yard, but the customary way of accounting is labor at

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*In Navy Yards, What is Overhead to Productive Labor*

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\$65.00, material at \$41.00; indirect expense 160%.

You will note that in the above account the electric shop of the Yard has a direct shop expense plus an indirect overhead which is in fact a phantom expense because, as you consider the routine of the necessary evolutions of placing a contract for material, the expenses involved in the many transactions are not prorated as a legitimate expense to be charged as overhead to the contractors, but if that same commutator had been manufactured in the Yard, it would not have received so much consideration by the accounting office, but would, on account of the cost of the personnel of all the departments which are not productive, be charged with 160% overhead because the expenditures of the Navy Yard are prorated as so much percent of its cost as determined by the total expenditures of the Naval District to which it belongs.

November, 1919, Boston Navy Yard's total expenditures were as follows:

Productive labor	\$400,399.48	P. L.	36.84%	
G. E. L.	271,669.33	G. E. L.	24.99%	= 67% P. L.
S. E. L.	308,461.90	S. E. L.	28.38%	= 77% of P. L.
A. M. L. I.	106,470.95	C. M. L. I.	9.79%	= 26.7% of P. L.
Total	<u>\$1,087,001.66</u>		<u>100. %</u>	<u>171.5%</u>

It is evident from the above that the 36.84% is not a percentage of efficiency, but a percentage

of expenditure of a Naval District which truly indicates that the cost of productive labor was 36.84% of the total expenditure of the Naval District, to which the Boston Navy Yard is assigned, and is the rate of expense of productive labor to the total pay roll. The remaining 63.16% of expenditures should not be considered as overhead to productive labor because each and every division of a Navy Yard is a necessity of the Navy and all such expenditures are for a military necessity, a protection to the industrial prosperity of the country and insurance against servitude to any power that might have a desire to capture our wealth, subdue our freedom of thought and liberty of actions.

In order to write of the accounting customs of the Navy Yard, it is important that the subject matter involved be made clear to any reader who is not familiar with their accounting systems; so the following will explain more fully the overhead burden to productive labor in Navy Yards. You have read that the cost of productive labor of the Boston Navy Yard for the month of November, 1919, was 36.84% of the total expenditure of the Naval District No. 1. We have next an expenditure of \$271,669.33 as G. E. L. 24.99% of the expenditures of the Yard for the month of November, 1919 — 67.8% of the P. L.

a third accounting of \$308,461.90 as S. E. L. or 28.38%, 77% of the cost of P. L. and a fourth figure as A. M. L. I. of \$106,470.95 or 9.79% of, or 26.5% of the cost of P. L., the \$1,087,001.66 which was the official report of expenditures for that month. This shows that if the productive labor of the Navy Yard was only 36.84% of the expenditures, that the remaining percentage of expenses was for the operation and maintenance, which is just 63.16% of the total expenses of the Station.

Believing that the public is not informed of the fact that Navy Yards have to offer competitive bids for repairs of the Shipping Board's Vessels, and, in addition to the cost of direct labor, they have to add 150% as overhead to the actual cost of labor, the writer affirms: If productive labor is \$400,390.48 or 36.84% of the total expenditure, G. E. L. \$271,669.33 or 67.8% of productive labor, S. E. L. \$308,461.90 or 77% of the productive labor and A. M. L. I. is 26.5% to productive labor by adding 67.8% plus 77% and 26.5%, which equals 171%. This is the overhead burden to productive labor in a Navy Yard, and is the only reason why mechanics in a Navy Yard are introduced to the American people as extravagant in cost and inefficient in production.

The reader, after considering the previous statements will ask the reasons why this system of accounting continues and why the Navy Yard must bid for work at cost of productive labor plus overhead. The reason is that general overhead is the legitimate expense of a Naval District, a Navy Yard and Naval Stations. Although it is not a necessity to the efficiency of industrial divisions, its cost is considered as proper indirect expenses. This overhead does not indicate to a party who knows the system of accounting anything that would reflect discredit to the civilian force employed in an industrial division of the yard, but it means a different consideration to the American public, who do not know. It is the direct result of the system, "Phantom Expense."

The civilian employee of a Navy Yard is an American citizen. He has conformed to the requirements of Civil Service rules and regulations. The department having need of his labor has given him a position according to his qualifications and the need of the division to which he is assigned. His retention in the service is not determined by his efficiency only. There are several factors which have to be considered for his retention in the yard. His real worth to a division in a Navy Yard is first of all a considera-

tion of efficiency of the shop in which he works and under the following possibilities.

Money must be available for his salary and from an appropriation to his division. If money is obtainable, work justifying, the expenditure must be on hand. At times when there is work, there is no money. When there is money, there is no work. In view of the above it is apparent that a mechanic is often discharged, through no delinquency on the part of neither his conduct, quantity of production nor quality of his work. These factors determine a man's value to the division, and taken together are considered as a man's efficiency or record of his merits. So, when a civilian is discharged from the yard for lack of funds, it is the employee who can best be spared by the service as recorded by his efficiency marks. His suspension is determined by his immediate supervisors in comparison with all other mechanics in the shop where he works. The supervisors in consultation determine an employee's efficiency, and mechanics have been discharged with a record of 98% efficiency. Can it be possible that a Navy Yard employee be considered as 98% efficient, when every dollar's worth of labor which he produces is supposed to cost the department an additional \$1.60 overhead, which is equivalent to \$2.60 for \$1.00 worth



of labor? If the mechanic producing labor is 98% efficient and is considered a desirable employee in a shop by direct comparison of his productive output with other employees, it must be evident that when we say 150% overhead to productive labor, it is surely not legitimate overhead, but in reality phantom expense.

Let us consider the reason why it is allowed. This reason is because the department officials know that it is only a percentage of station expenditures as compared to the cost of productive labor; that it is not an overhead expense to productive labor, but an expenditure for the need of the Navy Yard, Naval Stations and Naval District.

In all efforts to reduce overhead expenses it has been the practice to reduce direct shop expenses first, although their disbursements are the most important to an efficient shop. The master mechanic has control of a very small proportion of his direct shop expenses. Leave with pay and holidays amounts to 13% of the total pay of an employee for one year's salary, but it cannot be computed as a fixed monthly overhead because an employee may take all of his vacation during two or three months of the year, consequently his rate of direct shop expense cannot be anticipated or controlled in advance. The average



direct shop expenses for a year do not exceed 30% of the productive labor, and direct shop expenses are the only overhead which should be considered applicable to estimate for work in a Navy Yard for repairs, manufacturing or remodeling of the Shipping Board Transports to Merchant Ships.

The results would be that by increasing the output of the Navy Yard in productive labor, it would at the same time decrease the percentage of the general overhead expenses in proportion; doubling the production, would decrease our 150% to 75% overhead, as it is considered by the Shipping Board. Our 150% is a financial consideration. To the Navy Yard, it is an expenditure for operation and is a necessity as a percentage of cost of the Naval District and not overhead to productive labor. Why call it overhead? The officials know that it is *not* overhead; the public believe on account of published reports of that *phantom* 150% overhead to productive labor that the civilian is a burden to the Navy Department, rather than a necessity for its maintenance. The employees of the Navy Yard are not indifferent to their reputations. They are interested in a permanent position. They realize the efficiency of their shop will be a great factor to influence the bureau of the Navy Department

to recommend and assign work for the Navy to the Navy Yards.

Under the accounting system of the present time, it is humiliating to every conscientious workman in the Yard to read that overhead to productive labor is 160%. They do not understand what it means. They are similar to the public in general. They are convinced that it is a necessary expenditure, but not a necessity to the efficiency of the industrial division, but only tends to misinform the public as to the loyalty and devotion of civilian employees in a Navy Yard.

The supervisory force in the Navy Yards are interested in procuring work, not for a desire of employment, but a direct necessity to the efficiency of their respective shops. The first consideration is to have sufficient work, so as to take advantage of the skill of their workmen and shop equipment, not only through repairing periods, but at all times. Manufacturing in Navy Yards is secondary to ship repairs, so manufacturing for the Navy is a possible means of having an efficient and permanent working force at all times.

The Navy Yard work on Shipping Board Vessels has been excellent and received the commendation of the Shipping Board Inspectors.

The 150% overhead is the stumbling block to procure additional work for the Yards. In reviewing the customary practice of considering the cost of repairs to ships in Navy Yards, the ordinary method of placing cost of labor to ships, stations, departments and shops is very easily ascertained. The system of accounting is very commendable in view of the many problems which have to be overcome to the satisfaction of the department. It is a well known fact that all expenses are just and reasonable and if at any time the cost appears to be excessive, it is because an estimate for cost of repairs to ships equipment cannot be exactly determined by a casual observation. This is very apparent to any person who is qualified to pass judgment or to any who understands that a Navy Yard is not a manufacturing plant where parts for machines are made in quantity, it is only a big repair shop for repairing Naval Vessels.

It is very evident that a Navy Yard is not an industrial establishment; it is a Naval station that requires mechanics. If for any reason, which is not only possible but quite probable, it was desired to discredit the civilian mechanics employed in Navy Yards, there would be no better method to misinform the American people as to the efficiency of the mechanics in Navy

Yards, as is the present practice of publishing statements of the cost of productive labor with overhead expenses of 150%. This overhead is composed of all expenditures for the Navy, according to law, Navy Department Rules and Regulations, Bureau Orders, and is a military necessity, not an industry of production, but an arm of the people for its protection. Its existence is so important that the Navy can better afford to sustain its cost, than the civilian force of mechanics can justify the cost of its maintenance as an overhead to its productive labor.

All divisions are for the Navy. The cost of their operation must be legitimate or they would not continue. If their expenditures are a need of the Navy, they should be acknowledged as such and should be considered as their account by the Navy Department.

In Navy Yards there is equipment in buildings used by the productive departments that are for the Navy. The equipment and buildings are used for the repairing of the fleet. The depreciation of equipment and buildings is a shop expense. A supply division that is non productive, that occupies more floor space than any other, that must have power for their elevators, for heating and lighting, is a necessity to the Navy and quite often a financial handicap to produc-

tive labor in Navy Yards. This division expense is considered in the "phantom overhead" to productive labor. All their expenses are legitimate as a need of the Fleet, but are unjust as overhead to productive labor.

All divisions in Navy Yards are for the need of the Navy and let it be so considered. If one division is non-productive, do not on that account burden the good name of the conscientious employees with a stigma of dishonesty. Do not point out one branch of the Navy Yard as inefficient because of Rules and Regulations or practice that points a finger of suspicion on the civilian productive personnel to justify the cost of a non-productive department.

The civilian productive forces in Navy Yards are entitled to an equitable consideration. They are employed according to Rules and Regulations which govern civilian employees. Their retention is not a consideration of industrial efficiency; but it is a need of our naval defense. Their employment is justified by their personal efficiency; their individual efficiency is determined by their immediate supervisors approved by the heads of divisions as required by Civil Service Rules and Regulations. Let the efficiency of employees be determined, not by the interests who would benefit most by their in-

efficiency, but by the officials who have been accepted as qualified to judge the mechanic's ability, quantity of output and personal conduct. If a mechanic is accorded 99% efficiency by his supervisor, the official who is in a position to know and able to determine his actual output in real necessary work he is the person qualified to determine a civilian's efficiency in Navy Yards; and the cost of maintaining a non-productive department cannot be accepted as a factor of inefficiency of that civilian. There is no parallel industry to which Navy Yards costs of productive labor can be compared. Navy Yards are Naval Stations, not industrial plants. All the divisions are recognized as a necessity of the Navy.

### **Contrast Between Navy Yards and Private Company**

New boilers are needed on a ship; estimate of cost is given the bureau; private company will bid for work; their price is given according to specifications and the company is liable to the letter of the contract only; if additional work is required for interferences in carrying the work, the government is compelled to assist, either in additional funds, or a new contract, to permit the contractor to proceed. In addition, all cost



of inspection on this work reverts back as indirect expense to the productive labor of the Navy Yard and is prorated as overhead to productive labor working on other vessels at the Yard. On the other hand, if the Navy Yard has a contract, as work proceeds under actual cost of productive labor which is all 100% American, their work is never considered under the system of cost plus 10% profit; it is made to give service and it has never been excelled. The fact that the Navy Yard is proceeding with the work is equal to a call to all divisions that are non productive, that their expenses will be justified as indirect expenses, to the industrial shops of the Yard. It would appear ridiculous to any one who is familiar with industrial accounting to meet with such practice, and in fact, it is uncalled for and not justifiable in any way unless some one is deriving some benefit by it. The government is not sustaining any financial loss, but the civilian employees are not to blame and there is nothing that they can do that would in any way change the attitude of officials, that on account of the "phantom overhead," are very anxious to accept bids from private companies.

It has often been the wonder of the writer as to where the expenses of divisions would be placed were there no productive labor, in Navy



Yards to accuse of inefficiency because of expenses of divisions that are non productive, but nevertheless very essential to the upkeep of the Navy. The civilian employees are not so well informed as the Navy officers as to the items of expense which compose the indirect shop expenses, however they do know that with a system of accounting which places the cost of power not consumed as indirect expense on shops of divisions which are considered as productive, that it would be to the advantage of the department to maintain a productive force large enough to actually use the power generated and prevent a waste of power which is justified by placing its cost as indirect expenses on shops which do not use it. The shops in Navy Yards are at present like a battleship out of commission. The machinery is idle; the shops are deserted; there are no mechanics to operate that machinery that uses no power. The working forces are reduced according to money available to pay for repairs, but the shop expenses increase in a direct proportion to their reduction, because power not used is indirect shop expense in addition to the power actually used. This is not industrial management, but a bureau's order, so it is law.

Expenses are composed of the cost of supervision, leave with pay, holidays, disability, con-

summable supplies, power, heat, light, repair, maintenance and replacement of equipment. All of these are direct shop expenses. In addition we have as direct shop expenses the salaries of Naval officials who are detailed to our shops; their salaries are 52% direct shop expenses and 48% indirect. The accounting divisions has three accounts for the Electric Shop; X-51 for machine work; X-52 for hand work and X-54 for radio force. X-51 occupies 1/10 of the building, but all charges for power, heat, light and depreciation of building and all of the expenses enumerated above are placed to X-51 account; when in actual cost of expenses, it has been acknowledged that it should not be charged with more than 10% of the shop expenses because there is 90% hand work in the shop that should be charged with their just proportion of expenses and to X-52. It is evident that this accounting report has no value as a record of shop expenses. The Storage Battery building in which there is no machinery is repaired, maintained and its depreciation are all charged to X-51.

X-54 is for the radio force and the accounting offices report no shop expenses as charged to X-51 for building, power, heat and light. This is not an objection to the report, but is intended as a fact that will impress the reader with the value

of our shop expense report. I consider that our shop expense report is composed of so many irregularities as to make it of no value as a record of shop expenses.

Other considerations are quite as important, and one that is vital and unique to our department will be introduced for the purpose of additional evidence that our system of accounting is better adapted as a fidelity account than an industrial cost sheet.

The electrical division had on its rolls for the month of February 217 mechanics, 73 electrician's helpers and 7 laborers. Their maximum output in productive labor was 57,124 hours; the total number of productive hours to the credit of the electric shop was for that month 27,874 hours or less than 50% of its maximum production. This means that our division is not in a position to assume the direct shop expenses on equal consideration with other divisions; it means that our shop expenses could be double the expenses of another shop and yet be considered as efficient in cost of operation and production. The actual proof of this exception is, that after deducting 27,874 productive hours from our maximum output, 3,024 hours for red leave, 307 hours for disability, there will still be a total of 25,919 hours that have not been ac-

counted for. This 25,919 hours is 93% of our productive labor. This large percentage of productive hours is not a financial loss to the electric shop, but it was a factor of discredit because our direct shop expenses were higher than the other branch of the divisions that do not have to assume the additional cost of shop expenses of a force of mechanics who are employed in their shops, on maintenance work of other shops. This is considered direct shop expenses to the shops for which they are working, but not considered as productive labor to the electric shop. This means that the supervision that would be, under ordinary industrial practice, accepted as general expense is, in this case, direct shop expense to the electric shop. It increases our percentage of cost of supervision, holiday pay, red leave, disability and consummable supplies.

Civilian employees in Navy Yards are quite often introduced to the public as indifferent workmen, very inefficient as to quality and quantity of production. No one has ever refuted statements published in the American press, as to the poor work accomplished in Navy Yards. These statements are very erroneous in every way. Instead of being a drone, a Navy Yard employee has to be a good mechanic; an employee who can produce good work in satisfac-

tory quantity at all times; in addition, he has to be skilled and resourceful to a greater extent than is required of employees in industrial plants and factories. The reason for these requirements is, that a Navy Yard is administrated, not according to industrial practice, but in accordance to Rules and Regulations which determine every detail of the process of the work. This routine compels many considerations that do not prevail in any other shipbuilding corporation, and the facts are, that with these rules and regulations the Navy Yard employee has achieved excellent records, because he has at all times given work that could not be excelled. He has produced better ships at less expense in first cost of building and of maintenance after it was built, than any other shipbuilding corporation ever did. It was a Navy Yard accomplishment that compelled the private shipbuilders to stop and reduce the price of ship building for the Navy from \$216.00 to \$171.00 per ton. And it was then the same as it is today — the Navy Yard employee was inefficient and a loafer; he could soldier on his work better than any other workman; yet, in calling new men to work in the Navy Yard, any foreman will tell you that it was a rare exception that brought in a man that could be recommended as a first class workman, in com-

parison with a Navy Yard employee, although this same mechanic was, before his employment in the Navy Yard, receiving more pay than the first class mechanic in the Yard, when placed side by side, the Navy Yard employee could accomplish more and better work every day.

The comparison of employees' efficiency is at all times a very serious question and deserves to be given very conscientious consideration, as it has many important features that have very grave possibilities. It is no pleasure for a foreman to select men to be discharged, so it happens that a Navy Yard employee who is detached from the Navy Yard has no conception of the real facts in his dismissal. For that reason, he believes that he has been unjustly detached. This is contributing a very bad factor of misinformation to the public in general, as every employee, you might say, believes that he is the most valuable man in the yard; yet no matter what his skill, his knowledge or his value may be, a Navy Yard employee has to be discharged at times for lack of funds or lack of work. This means that it is hard to maintain an efficient working personnel, as considered in cost of productive labor for the reason that a first class mechanic in a Navy Yard soon becomes a specialist in many branches of his trade, and is, in consequence, the



mechanic the foreman wishes to retain, as he is considered an asset to the shop or to the efficiency of his immediate supervisors. But if that intelligent mechanic is discharged, he becomes at once a willing apostle of Navy Yard inefficiency; he cannot believe that others were more valuable than he was to the service; so he has been converted from a valuable employee to a discriminator through the lack of permanent employment. It then becomes evident that it is hard to find men that will be interested in refuting the above abuses made to Navy Yard employees in the daily papers, and as you read these facts, you will wonder that no one has ever said a word in defense of the citizen employed in the Navy Yard. The cause of this silence is due to the submission and subjective attitude of the conscientious employees, who are more interested in earning their families' subsistence and their children's education, than to refute attacks made on their honor and their loyalty. As Americans, they have learned to be industrious and useful in contributing their humble time to whatever cause their country has undertaken. They have worked in silence and resignation with young men, who just before the war, were their helpers but who quickly resigned their positions of helpers in the Navy Yard to become high priced mechanics for



contractors repairing ships in the Navy Yard at cost plus 10% profits. These contractors did not care how many hours his employees worked, because all double pay for overtime was as good as 20% plus cost to him. Yet, time and a half pay for Navy Yard employees is considered enormous, and during the late war, many were witness to the fact that a contractor's employee, who was a former Navy Yard helper, was receiving more than double the pay of a Navy Yard first class mechanic.

Many do say that Navy Yard employees are inefficient; this statement is made by persons who are not qualified to pass judgment, or by those who are willing to profit by propaganda that is as questionable as their motives are for making them. It is well that we bear in mind that previous to the building of the U. S. S. Connecticut in a government Navy Yard which forced the shipbuilding companies to lower their prices for the building of ships for the U. S. Navy, the Navy Yard employee was maligned in the same way. Today another system of propaganda is published all through the country against the civilian employees in the Navy Yards. It spreads false impressions of cost of production, by claiming that the overhead expenses are enormous; that it borders on extravagances to

maintain government Navy Yards for repairing the U. S. War Vessels, and the direct cause of these considerations is the fact that Navy Yards have made repairs on ships for the Shipping Board at cost of productive labor and material, plus 150% overhead. This 150% overhead is the stumbling block upon which the civilian employees are being discriminated. They are exposed to the ridicule of all men who are conversant with the meaning of the term "Overhead Expenses," but let us in open mind and sincere intention consider this Navy Yard phantom expense "Overhead," which is at this time the stone wall that the civilian employees have been driven to. Let us consult the chart attached hereto and you will find there, the total expenditures of four Navy Yards for one month, and in addition, the month of December, 1919, for the Boston Navy Yard.

The result is that you see a report of expenditures that fully indicates the composition of the overhead in Navy Yards; that in fact and absolute reality, it is not overhead expenses to productive labor, but a rate of expenditures of a Navy Yard, in comparison to the cost of productive labor, but not of its output or production.

A Navy Yard is not only a repair station, but it is also a supply base to all U. S. Navy ships.

Every ship that comes to the Navy Yard has access to its equipment for supplies or personnel as the ships may need. Many are the times when a ship comes to the Navy Yard and there are no repairs made; consequently there is no necessity of civilian mechanic's services, yet all the administrative offices of the Navy Yard are at the disposal of these ships for provisions, material, fuel, power, light, water and any other needs. All expenses of auxiliary equipment or non-productive personnel of the different divisions, or departments are considered as overhead to the productive labor employed in the manufacturing in Navy Yards, or repairing other ships that are at the Yard. In other words, all military expenditures are considered as overhead to productive labor. This is not fair to the civilian employees, as its publication as overhead is indicative of a lack of efficiency on the part of the employees and indirectly suggests that the supervisors are not accomplishing results.

There are no arguments that can justify an overhead cost of 150%. There is no explanation possible that would impress any one with the desirability of a system of accounting that places all expenditures of a Naval District as indirect or direct expenses to productive labor engaged in making repairs to ships assigned to the Yard.

Let each and every department or division assume the justifiable cost of its operation, as accomplished by services rendered which must be satisfactory as it is authorized by law and governed by rules and regulations of the Navy Department.

The costs of operation of Navy Yards are derived by appropriation to the Navy and for the Navy. Let all expenditures, no matter what they are, be considered as a need of the Navy. The facts that a division is merely for supplies, or for power for the Yard, and considered non productive, is no indication that it is non essential to the Navy, but it does not indicate that its expenditures should be considered as indirect charges to productive labor.

## **INDUSTRIAL MANAGEMENT OF NAVY YARDS**

### **Their Efficiency, Cost of Operation and Results**

Navy Yards are not industrial establishments in any consideration that might be expected by the term "Industrial." There are no establishments that are similar. There are none that we can compare to the efficiency of the civilian forces. There are no others that are adminis-

trated in the same manner. In reality and practice a Navy Yard is a Naval Station in every conception and meaning of the name. Navy Yards have many divisions; two of which are industrial divisions; they are the only branches that have civilian employees who are considered as productive forces. Their administration is by Naval Officers as heads of divisions, and by Naval Officers as aids to the Naval Constructors or Engineering office. In addition all other departments are administered by Naval Officers as the heads or managers of the division; although heads of divisions, their administrations are not according to their preferences; they have to observe rules and regulations, bureau orders, civil service rules and regulations and many other inconveniences that are not common to other ship-building corporations, if we may so compare them.

The officials of the industrial divisions cannot take advantage of the many recognized benefits that a private concern can, and the result is that it has a direct effect on the efficiency of his division if we forget that having no control over the handicap, it should not be a discredit to the efficiency of his division. It is not a requirement of his shop, but a bureau's order, a law. Let us assume that a Navy Yard is given a contract for

building a ship. That a private corporation is given a contract for a sister ship. Can a Navy Yard compete on equal terms with this phantom overhead? No, it can not. Will the ship built by the private corporation be built cheaper? No, it will not, and the reasons for the result are that a ship built in a Navy Yard is not given the same consideration by the Navy regulations that are given to a ship that is built by a private ship-building corporation. All work in Navy Yards is considered, not as an indirect expense to the Navy, but all expenditures are regarded as overhead to productive labor. This means that all government inspection of material for a ship that is built by a private corporation is not burdened with any overhead as determined by the cost of salaries of Naval Officials detailed to require that specifications be fully observed.

In a Naval Station or Navy Yard, when we talk overhead, we mean every expenditure of the Yard; — military, administrative, equipment, maintenance and naval personnel. No matter in what department or station of a district, a naval officer, an enlisted man or a civilian, all salary is indirect expense to the Navy Yard and considered as overhead to productive labor or indirect shop expenses prorated against the industrial division of the Yard. It might be well to



repeat here that all expenditures of money are according to appropriation as voted by Congress. This appropriation is specific and is supposed to be ample for the operation and maintenance and addition for our Navy for one year. This money has to be proportioned and distributed to the different bureaus and they allot this money to the ships, Navy Yards and Stations, according to regulations and needs of the Navy. It is quite important that we keep in mind at all times that all the above is because we have a Navy, that this Navy is a protection to the Nation, a first line defense against aggression. It is the need, not only of the sea coast states but of the country at large. It is a recognized assurance to our very existence as a Nation. For these reasons, we appropriate the peoples' money for the Navy, we recommend expenditures and in accounting to the bureau for these expenditures we report that productive labor which as contributed results in work accomplished for the ships in a Navy Yard which is for the Navy. That the administration, supplies, material purchased, cost of its power station, its military expenditures, its equipment, in fact every cent of its expenditures reported is overhead to productive labor.

The shops in Navy Yards have direct shop



expenses ; the power consumed by these shops is tabulated monthly. (By shops, it is meant the division that have civilian employees who make alterations and repairs to ships are considered as productive labor). In addition to power consumed by any one shop, it has to assume proportional share of the unused power as determined by the output of the power station, and the power actually used, and again assume as indirect or overhead, as considered by that 150% overhead, the power, heat, light, equipment, salary, depreciation, maintenance and salary of the total non-productive personnel, official or civilian of all non-productive departments of the Navy Yard. This is not industrial management.

Just imagine a manufacturing company having only two standard productions A and B.

A is a machine which is very popular and the Company is reaping a great financial profit through its success. B is a machine which could not be manufactured and sold at a profit, no matter what may be the cause. The company cannot transfer the cost of manufacturing B to A as indirect, and maintain their rate of profit. It is simply two considerations. A is a success ; B is a failure and is discontinued.

In a Navy Yard all expenditures are direct or indirect. It is a necessity of our government.

It is according to the approval of the legislative branch of our government for the protection of its very existence. It cannot be considered a failure. It is not expensive. It is an institution of faith that our nation is secure. Its necessity is absolutely established and justified as cost of its maintenance and not as overhead to productive labor; and when you so consider it, you have accomplished an act of justice to the civilian employee who contributed to the productive labor and places the cost of upkeep where it belongs. It is for the Navy in every instance and we do not believe that it is just to consider the expenses of a non-productive department which is for the Navy as overhead to productive labor, that makes repairs to the ships. It is not a requirement of productive labor that we burn powder to salute incoming or outgoing ships; it is not a necessity of productive labor that we have a naval prison in a Navy Yard. It is not a need of productive labor that we have radio stations to repair, operate and maintain. These stations are for the Navy that safeguards our government and protects the shipbuilding companies as well as the people of the great United States. It is for the Navy that we have a first Naval District and not a requirement of the civilian force of the productive division of a Navy Yard. The following will point out some of the sources of expenses

that constitute the 150% overhead to productive labor:

*First Naval District*

Auditing Section.

Board of Appraisal, Survey and Sale.

Courts and Boards.

Board of Medical Examiners.

General Court Martial Board.

Local Examining Board.

District Communication Office.

District Detail Office.

District Public Works Office.

Inspector of Hull Material.

Legal Aid Office.

Medical Aid.

Naval Brigade Reserve Force.

Office of the Commandant, 1st Naval District.

Office for Aid for Supply.

Office of Reorganization of U. S. N. R. F.

Wholesale Section.

*Outlying Stations 1st Naval District.*

Air Station, Chatham.

Ammunition Depot, Hingham.

Branch Hydrographic Office.

Coaling Station, East Lemoine, Maine.

Cost of Inspection, Bethlehem Shipbuilding Corp. Quincy.

Inspection Engineer, Material, Custom House, Boston.

Inspector Fuel Oil, Fall River, Mass.

Inspector Machinery, Bethlehem Shipbuilding Corp., Quincy.

Inspector Naval Ordinance, Quincy.

Naval Hospital, Chelsea.

Naval Radio Station, Bar Harbor, Maine.

Officers under instruction, Harvard University.

Officers under instruction, Mass. Institute of Technology.

Receiving Ships at Boston and Hingham.

Superintending constructor.

All of the above are expenditures that are considered as indirect expenses to productive labor. They are all legitimate and true but their justification as overhead expenses to productive labor is an impossibility, and the officials of the departments that are considered as productive should consider this question of overhead as a vital issue. They should consider that the civilian employees in their departments have a right to expect of them, conscientious efforts to remove the insinuation that they are dishonest as this phantom 150% overhead indirectly implies. It is not a pleasant duty that leads to honorable deeds. No official wishes to question a bureau's order, because military discipline has its needs,

but in this case justice sleeps while the civilian force works in hope that some champion of righteousness will respectfully ask for just consideration of those who contribute by their skill a day's work for a day's pay. The civilian employees are given 30 days' vacation; this should not be considered as cause of excessive cost of labor, for it is well known that with 30 days' leave with pay, 7 holidays and Saturday afternoons for three months of the year, only amounts to 13% of a mechanic's earnings for one year. This is not comparable to the known profits that private manufacturing companies receive for their work for the Navy.

Previous to the world war the Navy Yard mechanic was maligned and falsely accused, as he is today, that he was a most undesirable unit of the Navy Department. With all these accusations, the Navy Department was then given better value by the Navy Yard employees, than was ever given by any shipbuilding corporation. It was the product of a Navy Yard that reduced the cost of building battleships from \$216 to \$171 per ton, a reduction of \$45 per ton. This was the economic result of Navy Yard loafers; civilians, soldiers, that certain interests were then slandering for no other purpose than their own financial gain. If first cost of building battle-

ships was the only consideration, it would still be a monument of great merit; but there was an additional honor that was just as worthy. The cost of repairing and maintaining the U. S. S. Connecticut built in New York Navy Yard, was \$111,833.58. Her sister ship the U. S. S. Louisiana built by private shipbuilding corporation cost \$149,167.00 or \$37,333.42 more to maintain for one year. In addition to the saving of \$670,036.45 on the original cost of building.

You have read "Overhead." You know the meaning of the term as applied to industrial management. Overhead in Navy Yards means nothing compared to its application to manufacturing. It is an invention of unjust insinuation. It is a phantom which casts a shadow of dishonesty on the employees of Navy Yards. The commendation that Navy Yard employees receive of their superiors and commanding officers of ships which they have repaired are soon forgotten when the dark rays of suspicion caused by the indifference of those who should before today have cried: "Halt! Overhead, You are not a child of economy, but a shame that means death to our National aspirations, liberty and equity to one and all."

It is respectfully requested that the practice of 25% to 30% indirect expense to manufactur-



# In Navy Yards, What is Overhead to Productive Labor

~~E.P.D.~~ 248

## NAVAL EXPENDITURES

### MONEY

<b>TITLE C-D-K-P SHIPS</b>  C-OPERATING EXPENSES D-REPAIRS K-ALTERATIONS P-REPAIRS TO EQUIPAGE	<b>TITLE G-S STATIONS</b>  G-OVERHEAD EXPENSES S-MAINTENANCE OF MILITARY STATIONS	<b>TITLE V ESTABLISH- MENT</b>  V-GENERAL ADMINISTRATION CHARGES NOT ASSIGNABLE TO ANY SHIP OR STATION	<b>TITLE A-B SHIPS</b>  A-FIRST COST OF HULL MACH. AND PERM- ANENT FITT- INGS B-FIRST COST OF EQUIPAGE	<b>TITLE E-R STATIONS</b>  E-PLANT ADDITIONS R-PLANT ADDITIONS OF MILITARY STATIONS
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### TITLE "X" MATERIAL IN STORE

### TITLE "Z" MATERIAL IN PROCESS

### COST ACCOUNTS - APPROPRIATION ACCTS - FIDELITY ACCTS

NOVEMBER 1913

BOSTON				NEW YORK			
P.L.	400,399.46	= 36.64%		P.L.	758,871.39	= 41.88%	
G.E.L.	271,669.33	= 24.99%	= 67% of P.L.	G.E.L.	508,717.42	= 28.07%	= 67% of P.L.
S.E.L.	308,461.90	= 28.38%	= 77 " "	S.E.L.	447,000.94	= 24.67%	= 58 " "
AML.I.	106,470.95	= 9.79%	= 26.5 " "	AML.I.	37,611.08	= 5.38%	= 12 " "
TOTAL	1,087,001.66	= 100.00	170.5% "	TOTAL	1,612,200.83	= 100.00	137% "
PHILA.				NORFOLK			
P.L.	555,373.19	= 39.79%		P.L.	422,373.49	= 37.61%	
G.E.L.	403,902.93	= 28.94%	= 72% of P.L.	G.E.L.	312,666.40	= 27.40%	= 74% of P.L.
S.E.L.	287,246.00	= 20.58%	= 51 " "	S.E.L.	283,045.12	= 24.80%	= 67 " "
AML.I.	149,150.58	= 10.69%	= 26 " "	AML.I.	123,193.54	= 10.79%	= 29 " "
TOTAL	1,395,678.70	= 100.00	149% "	TOTAL	1,141,278.55	= 100.00	170% "
BOSTON DEC. 1913.				BOSTON DEC. 1913.			
P.L.	445,000.32	= 40.30%		P.L.	496,846.96	= 45.00%	
G.E.L.	278,029.87	= 25.16%	= 62% of P.L.	G.E.L.	310,474.20	= 28.12%	= 62% of P.L.
S.E.L.	265,831.12	= 24.00%	= 59 " "	S.E.L.	296,783.31	= 26.88%	= 59 " "
AML.I.	115,243.27	= 10.44%	= 25 " "	AML.I.			
TOTAL	1,104,104.58	= 100.00	146% "	TOTAL	1,104,104.47	= 100.00	121% "

IT WILL BE NOTED FROM THE ABOVE THAT 157% IS NOT OVERHEAD EXPENS., BUT A PERCENTAGE OF EXPENDITURE TO PRODUCTIVE LABOR. i.e. P.L.

DESIGNED BY F. AMELLOTTE QT. ELEC. NAVY YARD BOSTON MASS.

BOSTON NEW YORK PHILA NORFOLK  
171 + 127 + 149 + 170 = 157%

4

ing in Navy Yards be re-established as was the custom for a long time. It is reasonable and practicable. It would be to the advantage of our Navy and the Employees, — for they would be able to produce as in the past, by quantity that could not be excelled, and quality for service, at the least expense to our Navy.

### IN PREPARATION

Shop Management; Civilian Supervisors, Their Authority; Responsibility and Control of Direct and Indirect Shop Expense.

Comparison of our Present Direct and Indirect Expense to Productive Labor; Their Individual Percentage and Apparent Cost.

Remedial Suggestions for the Betterment of Output in our Navy.

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## COPY OF LETTER

From: Departmental Wage Board of Review

To: Secretary of the Navy

## SUBJECT OVERHEAD

References (a) Department's circular letter of May 10, 1921.

(b) Asst. Secretary's Letter of May 19, 1921.

Par. 16 The amounts chargeable to overhead expense at Navy Yards have been excessive. Many officers who really are on duty at yards for the purpose of instruction have their pay charged, in the present system of cost accounting, to overhead expense. Such expenses should be military and not industrial. A change in this respect in the system of accounting will not involve absolute improvement in Navy Yard efficiency but will give a more accurate idea of the economic efficiency of Navy Yards. On the contrary, if sufficient allowance be made for military expense at Navy Yards such as those which involve any necessary readiness for war service, the training of enlisted personnel, the preservation of large reserve supplies, store houses, and other facilities, for the purpose of war use rather than mechanical or economic efficiency, it is believed that a correct measure of navy economic efficiency would show that it is favorably comparable with private establishments.

/S/ JOHN K. ROBISON

Captain, U. S. N., Senior Member

F. S. CURTIS

Chief Clerk, Navy Department, Member

A. J. BERRES

Representing Labor, Member

WM. D. BERGMAN

Chief, Appointment Division, Recorder

Approved. Special Attention invited  
to paragraphs 12 to 19 inclusive.

/S/ EDWIN DENBY

Secretary of the Navy

Under date of August 31, 1921

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